UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/670,600	09/26/2003	Hisao Kato	07057.0053	9894

7590 08/10/2004

Finnegan, Henderson, Farabow,
Garrett & Dunner, L.L.P.
1300 I Street, N.W.
Washington, DC 20005-3315

EXAMINER	
HAILEY, PATRICIA L	

ART UNIT	PAPER NUMBER
1755	

DATE MAILED: 08/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/670,600	KATO, HISAO	
	Examiner	Art Unit	
	Patricia L. Hailey	1755	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 September 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-8* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-8* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *09/26/03*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Applicants' Priority Document was filed by Applicants on September 26, 2003.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-6 are rejected under 35 U.S.C. 102(b) as anticipated by Auer et al. (U. S. Patent No. 6,066,410).

Auer et al. teach a platinum/ruthenium alloy catalyst that includes finely dispersed alloy particles on a powdery, electrically conductive carrier material (Abstract; col. 1, lines 6-10 of Auer et al.).

The catalyst is prepared by applying the alloy particles to the carrier in highly dispersed form, e.g., precipitation via impregnation with the aid of pre-formed surfactant-stabilized platinum/ruthenium alloy colloids at a temperature maintained between 20 and 110°C, followed by washing with appropriate solvents (which are removed by filtration or distillation), and removal of the stabilizing surfactant via calcination, thereby simultaneously activating the catalyst.

Calcination is performed at temperatures between 200 and 400°C under inert gas. See col. 4, line 18 to col. 5, line 29 of Auer et al., especially col. 5, lines 18-29.

The catalyst of Auer et al. can be used to prepare various components of fuel cells, such as gas diffusion electrodes. See col. 5, lines 30-58 of Auer et al.

Auer et al. is silent with respect to any oxygen being present in Patentees' catalyst. Because Applicants' claims recite oxygen contents of, for example, "4.4 wt% or less", the catalyst of Auer et al. is considered to inherently read upon these claim limitations. Further, because the preparation of the catalyst of Auer et al. as discussed above involves maintaining the platinum/ruthenium alloy colloids at a temperature between 20 and 110°C, as well as calcining the catalyst under inert gas at temperatures between 200 and 400°C, Applicants' claimed "oxygen content regulating step" and "supporting step" as recited in claims 3-6 are considered inherently taught by Auer et al.

In view of these teachings, Auer et al. anticipate claims 1-6.

4. Applicant cannot rely upon the foreign priority papers to overcome this rejection because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ito et al. (U. S. Patent No. 6,649,300).

Ito et al. teach an electrode catalyst for fuel cells, said catalyst comprising a conductive carbon, platinum supported on the conductive carbon, and oxygen bonded chemically to the conductive carbon. The oxygen is present in an amount corresponding to an atomic ration of oxygen:platinum of 0.7 to 3. See col. 3, lines 21-27 of Ito et al.

The electrode catalyst is obtained by adding a solution of platinum compounds to a slurry containing a conductive carbon, allowing the platinum compounds to react with a reagent to form fine colloidal particles of hydroxoplatinate, and allowing the colloidal particles to deposit on the conductive

carbon surface, and wet-reducing the hydroxoplatinate in the slurry by the use of a reducing agent. After the reduction has completed, the slurry may be filtered, washed, and dried by conventional methods. See col. 5, line 5 to col. 6, line 8 of Ito et al.

The platinum present in the electrode catalyst may also be alloyed with "counterpart metal component" metals such as ruthenium to produce a supported platinum alloy electrode catalyst. See col. 6, lines 29-34 and lines 57-59 of Ito et al.

The supported platinum alloy electrode catalyst is produced by forming a precursor comprising the platinum supported on the conductive carbon, as discussed above, followed by supporting thereon the "counterpart metal component", followed by reduction treatment to alloy the platinum and counterpart metal component, said reduction effected by making heat treatment in a reducing atmosphere or in an inert gas, usually under temperatures from 200 to 1000°C. See col. 7, lines 1-25 of Ito et al. This disclosure is considered to read upon Applicants' claimed method steps as recited in claims 3-8.

The supported platinum alloy electrode catalyst can be used in fuel cells. See col. 7, lines 26-31 of Ito et al.

Tables 1 and 2 of Ito et al. depict exemplary and comparative catalysts, having oxygen contents reading upon Applicants' claimed ranges of "4.4 wt% or less" and "14.1% or less".

Although Ito et al. do not provide any specific examples of a platinum/ruthenium alloy, it would have been obvious to one skilled in the art to employ ruthenium as a "counterpart metal component" in producing Patentees' supported platinum alloy electrode catalyst, as disclosed by Ito et al. at col. 6, lines 38-63, and, in doing so, obtaining a platinum alloy electrode catalyst reading upon Applicants' claims in their present form.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patricia L. Hailey whose telephone number is (571) 272-1369. The examiner can normally be reached on Mondays-Thursdays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark L. Bell can be reached on (571) 272-1362. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group 1700 Receptionist, whose telephone number is (571) 272-1700.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Patricia L. Hailey/plh
Examiner, Art Unit 1755
August 4, 2004

Mark L. Bell
Supervisory Patent Examiner
Technology Center 1700